

CLAIMS

What is claimed is:

1. An apparatus comprising:

a means for receiving into a configurable programmed holographic structure comprising a plurality of diffractive elements, an input optical signal comprising a first spatial wavefront, the first spatial wavefront comprising a first wavefront shape and a first optical spectrum, the input optical signal further comprising a first direction of propagation;

a means for diffracting an input optical signal, producing a diffracted optical signal comprising an optical spectrum that differs from the input optical spectrum in at least one of amplitude and phase, the diffracted optical signal comprising a second direction of propagation that differs from the first direction of propagation;

a means for transmitting the diffracted optical signal, the diffracted optical signal comprising a second spatial wavefront that comprises a second wavefront shape, wherein the first and second spatial wavefronts are not identical in shape; and

a means for configuring the configurable programmed holographic structure.

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